

DOCKET NO. 2001.05.024.WS0
U.S. SERIAL NO. 10/078,277
PATENT

REMARKS

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Claims 1-24 were originally filed in the present application.

Claims 1-24 are pending in the present application.

Claims 1-3, 6, 9-13, 16 and 19-24 were rejected in the April 4, 2007 Office Action.

Claims 4, 5, 7, 8, 14, 15, 17 and 18 were objected to in the April 4, 2007 Office Action.

Allowable Subject Matter

The Examiner is thanked for noting Claims 4, 5, 7, 8, 14, 15, 17 and 18 would be allowable if rewritten in independent form.

Claims Rejections: 35 USC § 103

Claims 1-3, 6, 9-13, 16, and 19-24 have been rejected under 35 U.S.C. § 103(a) as being anticipated by U.S. Patent No. 6,996,056 to *Chheda, et al.*, hereinafter referred to as "Chheda" in view of U. S. Patent No. 6,031,877 to *Saunders*, hereinafter referred to as "Saunders".

In *ex parte* examination of patent applications, the Patent Office bears the burden of establishing a *prima facie* case of obviousness. MPEP § 2142, p. 2100-133 (8th ed. rev. 4, October 2005). Absent such a *prima facie* case, the applicant is under no obligation to produce evidence of nonobviousness. *Id.* To establish a *prima facie* case of obviousness, three basic criteria must be met: *Id.* First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to

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combine reference teachings. *Id.* Second, there must be a reasonable expectation of success. *Id.* Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. *Id.* The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *Id.*

Claim 1 requires "a database capable of storing R active wireless terminal records, each of said R active wireless terminal records containing: 1) an active orthogonal code and 2) corresponding downlink beamforming coefficients used to communicate with one of said wireless access terminals." Claim 11 requires "a database capable of storing R active wireless terminal records, each of said R active wireless terminal records containing: 1) an active orthogonal code and 2) corresponding downlink beamforming coefficients used to communicate with one of said wireless access terminals". Claim 21 requires "storing R active wireless terminal records, each of the R active wireless terminal records containing: 1) an active orthogonal code; and 2) corresponding downlink beamforming coefficients used to communicate with one of the wireless access terminals". These limitations are not taught or suggested by Chheda.

Chheda does not teach or suggest a database of active wireless terminal records, where each record had an active orthogonal code and corresponding downlink beamforming coefficients. In fact, Chheda does not mention beamforming coefficients at all, much less specific sets of coefficients each corresponding to an active orthogonal code and stored as claimed.

The Examiner responds by stating that "one cannot show nonobviousness by attacking

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references individually where the rejections are based on combinations of references.” While this is certainly true as a general statement, any analysis of a “combination” rejection must include an analysis of what each individual reference teaches. It is the Examiner’s burden to show where each limitation is taught by each reference. The Examiner has alleged that the claimed database is taught by Chheda. It is therefore not only appropriate but necessary to review Chheda to review whether the Examiner’s allegations have any basis in fact. They do not.

The Examiner states that Chheda’s col. 5, lines 14-17, col. 8, lines 49-54, and col. 11, lines 17-29 teach the claimed database. A review of these passages shows that the Examiner is in error:

For each user in a sector, the following information is maintained (assuming that the various algorithms/features required to obtain such information are implemented), and used to generate weights; these include: the distance from sector site center, the mobile’s speed, the mobile’s direction, the call data rate, the call type, the duration of the call and expected duration of call, the current frame error rate of user as compared to its expected operating frame error rate, the current power in use by the user as compared to its upper limit of power, the handoff state, the angle of arrival of the user, the determination as to whether the Walsh code assigned to the user is already in use by another zone within the same sector (and by how many), and the determination as to whether the user is employing a narrow beam and at the properties of such a narrow beam (since different users can be using different beams). This information can be stored at the base station controller or at the individual base stations. In some cases, due to the open interface nature between the various connecting nodes in a network, it may be preferred to have such information stored at the base station. *Col. 5, lines 1-19.*

Referring now to FIG. 2, a cell shown generally at 200 includes a base station transceiver system (BTS) 204 that communicates with mobile stations utilizing a code division multiple access scheme in which the communication channels between the BTS and each mobile station is created by one of a group of Orthogonal codes. *Col. 5, lines 48-54.*

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One purpose of FIG. 3B is to illustrate that part of the invention that includes statically determining and maintaining an awareness, either in tabular format or in another format, interference patterns between all the zones as a result of the transmission of primary and side lobes. If the type of smart antenna can be changed in the system, then the table must be obtained as often as the antennas are changed, as the interference properties could also change. In addition, if the beamwidth of the antennas can actually be changed during the call, as some smart antennas are capable of doing, then the widest beamwidth of the smart antenna is used to generate the table. *Col. 11, lines 16-28.*

These passages generally mention some issues, such as orthogonal codes and beam properties, but do not teach or suggest the specific claim limitations. Figure 3B even includes a table – but it does not store active wireless terminal records containing: 1) an active orthogonal code and 2) corresponding downlink beamforming coefficients used to communicate with one of said wireless access terminals, as claimed. Saunders does not teach this limitation either, and the Examiner does not allege any such teaching, and so it is clear that these limitations of the independent claims are not taught or suggested by any art of record, alone or in combination.

The Examiner also makes a statement in response that “[t]he claims are read with a broad reasonable literal interpretation, and claims are read in light of the specification without reading limitations from the specification into the claims.” The claims require “a database capable of storing R active wireless terminal records, each of said R active wireless terminal records containing: 1) an active orthogonal code and 2) corresponding downlink beamforming coefficients used to communicate with one of said wireless access terminals.” Any “broad reasonable literal interpretation” must include a database storing records as claimed. There is no “broad reasonable

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literal interpretation" that can interpret this database with specific characteristics to be equivalent to a BTS without a database, and having none of the claimed characteristics.

The Examiner states that "Chheda disclose a cell which includes a base station transceiver system 204 that communicates with mobile stations utilizing CDMA in which communication channels between the BTS and each mobile station is created by one of a group of orthogonal codes (equivalent to a database storing terminal records)...." This baseless statement of "equivalence" is used by the Examiner to ignore the plain, literal requirements of the claims. A BTS is not a database, and there is no teaching or suggestion at all of a database that meets the limitations of the claims.

The Examiner further states that "Chheda disclose ... using smart beamforming antennas with preselected coefficients (equivalent to an active orthogonal code used to communicate with one of the terminals)...." As Applicant has already specifically pointed out, Chheda does not teach anything about coefficients. Chheda also doesn't describe anything as "preselected". In short, the Examiner's statement here of Chheda's teachings is wholly incorrect.

Claim 1 further requires "comparing said each of said R active wireless terminal records to new downlink beamforming coefficients suitable for forming a downlink transmit beam for transmitting to said new wireless access terminal and, in response to said comparison, determines at least one active wireless terminal record containing corresponding downlink beamforming coefficients that have the least correlation with said new downlink beamforming coefficients".. Claim 11 further requires "comparing said each of said R active wireless terminal records to new downlink beamforming coefficients suitable for forming a downlink transmit beam for transmitting

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to said new wireless access terminal and, in response to said comparison, determines at least one active wireless terminal record containing corresponding downlink beamforming coefficients that have the least correlation with said new downlink beamforming coefficients". Claim 21 further requires "comparing each of the R active wireless terminal records to new downlink beamforming coefficients suitable for forming a downlink transmit beam for transmitting to the new wireless access terminal; and in response to the comparison, determining at least one active wireless terminal record containing corresponding downlink beamforming coefficients that have the least correlation with the new downlink beamforming coefficients". These limitations are similarly not taught or suggested by Chheda.

As Chheda does not at all teach or suggest the beamforming coefficients as claimed, it certainly does not teach the claimed comparison and determinations related to the beamforming coefficients. The Examiner concedes that this feature is not taught or suggested by Chheda, and so looks to Saunders.

The Examiner specifically cites Saunders col. 2, lines 49-63:

Apparatus for receiving and transmitting information from an array of adaptive antenna elements, the apparatus comprising storage means for storing received information and characterised by: a predictive filter for estimating, in response to the received information, predicted information likely to be received by the apparatus in at least one future transmission to the apparatus; and means for combining the previously received information and the predicted information to generate beamforming coefficients for weighting information to be transmitted subsequently from the array of adaptive antenna elements, thereby allowing beamforming coefficients to be calculated prior to receipt of information to be received by the apparatus in at least one future transmission to the apparatus. *Col. 2, lines 49-62.*

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As can be seen, Saunders generally teaches a method and apparatus for adaptive or predictive beamforming. However, Saunders does not teach or suggest the specific comparison required by the claims, and does not teach or suggest the specific determination required by the claims. Specifically, in terms of Claim 1, Saunders does not teach or suggest comparing said each of R active wireless terminal records to new downlink beamforming coefficients suitable for forming a downlink transmit beam for transmitting to said new wireless access terminal, and Saunders does not teach or suggest determining, in response to that comparison, at least one active wireless terminal record containing corresponding downlink beamforming coefficients that have the least correlation with said new downlink beamforming coefficients.

As these limitations of the independent claims are not taught or suggested by Chheda or Saunders, alone or in combination, all rejections are traversed.

Accordingly, the Applicant respectfully requests the Examiner to withdraw the § 103 rejection with respect to these claims.

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SUMMARY

For the reasons given above, the Applicant respectfully requests reconsideration and allowance of the pending claims and that this application be passed to issue. If any outstanding issues remain, or if the Examiner has any further suggestions for expediting allowance of this application, the Applicant respectfully invites the Examiner to contact the undersigned at the telephone number indicated below or at *jmockler@munckbutrus.com*.

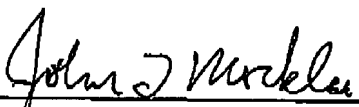
The Commissioner is hereby authorized to charge any additional fees connected with this communication or credit any overpayment to Deposit Account No. 50-0208.

Respectfully submitted,

MUNCK BUTRUS, P.C.

Date: 4 June 2007

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